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word, *livre*. In respect to this country, however, there may be danger, as Prof. Slosson intimates, that we may after all drift into a less satisfactory system than the metric, in case the adoption of the latter should be too long delayed.

At the present moment we are really in some sort in the predicament of the boy blubbering at the street corner, who explained to the sympathetic stranger that his hands were so cold that he couldn't put on his mittens because it would 'hurt.' It would have been false and futile to have told the urchin that his hands were not cold or that the enterprise he shrank from could bring no pain, but it might have been well to convince him that he was a baby, and to have suggested ways and means of taking the leap with the least possible inconvenience.

F. H. STORER.

SCIENTIFIC LITERATURE.

Preliminary Synopsis of the American Bears. By DR. C. HART MERRIAM. Proc. Biol. Soc. Washington, X., 1896, pp. 65-83, pll. iv-vi. April 13, 1896.

Material for the comparative study of any of the larger mammals is exceedingly troublesome to bring together in satisfactory amount, owing to its bulky character and the labor and expense of its preparation and transportation. This is particularly the case with our North American bears, where the large series of specimens, skins as well as skulls, necessary for their detailed study, is especially difficult to acquire. By the expenditure of much time and labor Dr. Merriam has been able to gather for the present investigation about 200 skulls, but, owing to the lack of proper material, has been unable to treat of the external characters of the species and sub-species he believes are entitled to recognition. In fact, of several of the forms here for the first time recognized no skins exist in any of our museums. We, hence, have here merely a preliminary announcement of the results of a study of the cranial and dental characters, which is 'to be followed later by a more comprehensive treatise.' This preliminary announcement, however, is most welcome, since it has been for some time evident that the num-

ber of forms of North American bears is much greater than has been currently recognized.

As all are aware who have made a study of bears, the range of individual variation, in cranial as well as in external characters, is quite extended, in addition to which there is much variation due to age and sex. This Dr. Merriam duly concedes, and still finds, after making allowance for such differences, characters that appear to be constant, by which the species and sub-species may be recognized. In view of what is now known of the variability, with varying conditions of environment, of the smaller North American mammals, it is not surprising that Dr. Merriam has found it necessary to recognize a considerable number of new forms. Whether their status will be that of full species or in some cases that of sub-species merely, it is evidently too early to determine. Of the eleven species here formally admitted, five are described as new, and two additional sub-species are incidentally indicated as probably worthy of recognition.

Heretofore it has been customary to refer the bears of North America to three groups, consisting of the polar bear type, the grizzly bear type and the black bear type. To these Dr. Merriam adds the Sitka bear type and the Kadiak bear type. The polar bear was long since separated from the land bears as *Thalarctos maritimus* (Linn.), and remains thus far a monotypic group. The black bears were also some time since distinguished as a separate sub-genus (*Euarctos* Gray) of the genus *Ursus*, in which latter genus all the other North American bears are still retained.

Dr. Merriam considers that "the black bears may be separated into at least four species, having more or less circumscribed geographic ranges." He recognized of the grizzly bear group also four more or less marked forms. As distinct from the grizzlies, Dr. Merriam distinguishes, as already said, two other types of large bears, one of which consists of two species and the other of one, the *Ursus middendorffi*, 'the largest of living bears,' and 'differing markedly from the other American species.'

The species and sub-species recognized in this important paper are the following:

1. Polar Bear, *Thalarctos maritimus* Linn.

2. Kadiak Bear, *Ursus middendorffi* Merriam, of Kadiak and the Alaskan Peninsula.
3. Yakutat Bear *Ursus dalli* Merriam, from Yakutat Bay, Alaska.
4. Sitka Bear, *Ursus sitkensis* Merriam, from Sitka.
5. Grizzly Bear, *Ursus horribilis* Ord.
6. Alaska Grizzly, *Ursus horribilis alascensis* Merriam (nom. prob.).
7. Sonora Grizzly, *Ursus horribilis horriæus* Baird.
8. California Grizzly, *Ursus horribilis californicus* Merriam (nom. prob.).
9. Barren Ground Bear, *Ursus richardsoni* Reid.
10. Black Bear, *Ursus (Euarctos) americanus* Pallas.
11. Louisiana Bear, *Ursus (Euarctos) luteolus* Griffith.
12. Everglade Bear, *Ursus (Euarctos) floridanus* Merriam.
13. Glacier Bear *Ursus (Euarctos) emmonsii* Dall, St. Elias Alps, Alaska.

The paper is very fully illustrated, having seventeen cuts in the text and three plates, illustrating the dental and cranial characters of the forms recognized. Many of the figures of the skulls are reproductions from photographs.

J. A. A.

Elementarcurs der Zootomie in fünfzehn Vorlesungen. Von DR. B. HATSCHKE und DR. C. J. CORI. Jena, Gustav Fischer. 1896.

This new zootomy of viii. and 104 octavo pages, 18 plates and 4 text figures comes to us as a surprise after waiting so long (and apparently in vain) for the Vierte Lieferung of Hatschek's Lehrbuch der Zoologie. It devotes four lectures to *Salamandra maculosa*, one to *Rana temporaria*, two to *Anodonta mutabilis*, two to *Helix pomatia*, two to *Astacus fluviatilis*, two to *Periplaneta orientalis*, one to *Lumbricus terrestris*, and one to *Hirudo medicinalis*. *Apus cancriformis* and *Hydrophilus piceus* each constitutes an 'Anhang' to the eleventh and thirteenth lecture respectively. Of the plates four are devoted to the Salamander, one to *Rana*, two to *Anodonta*, two to *Helix*, three to *Astacus*, one to *Apus*, three to *Periplaneta* and *Hydrophilus*, one to *Lumbricus* and one to *Hirudo*.

The general plan of the book is to indicate first in a table or two the systematic position of the animal to be studied; then, as an introduction, give a brief account of the organization and relationship of the group to which the animal belongs, and then give an account of the external and the internal anatomy of the animal, preceding the accounts of the several systems of organs with brief laboratory directions. Practically it is a meager laboratory guide distributed in a text-book that aims to give the beginner a general survey of the animal kingdom in as short a time as possible, and with material most easily obtained at Prague.

The fish is omitted because a profitable study would require too much time, and the Coelenterata, Echinodermata and Ascidians are merely alluded to in the lectures, because laboratory work on these groups is impracticable in 'eines ganz elementaren Kurses.' When we read the lectures, the technical notes and examine the figures we exclaim what is a 'ganz elementar Kursus' at a university!

In the preface we are told this elementary course in zootomy is the outcome of a ten-years' experience at the University at Prague and that with respect to 'Form, Inhalt und Ausdehnung' it represents quite accurately the annual course of lectures and exercises given at the University. The object of the course, it is stated, is to acquaint the beginner with a mass of facts that in connection with the lectures upon theoretical zoology shall constitute a foundation for more advanced study.

All of this we are assured can be attained in fifteen two-hour periods! This will no doubt be welcome news to the lovers of the '14 weeks' courses which many of us mention with so much respect. Personally we have no time to waste upon such courses at our colleges or universities, and we even have our doubts as to their value in our high schools.

It is the unanimous verdict of careful observers that the American student in general is not a whit inferior to the German student, and yet these authors would have us believe their beginners in zoology study 'in fruchtbringender Weise' the vascular and nervous systems of *Salamandra maculosa*—listening to the lecture, dissecting and making sketches and notes of